

Expected Health Effects from Radiation Exposure

Expected health effects for an adult assuming the cumulative total radiation exposure was all received within a weeks' time. **For children, the effects can be expected at half these dose levels.**

1 Roentgen [R]	=	1,000 Milliroentgen [mR]
1 Milliroentgen [mR]	=	0.001 Roentgen [R]
100 Milliroentgen [mR]	=	0.1 Roentgen [R]

TOTAL EXPOSURE	ONSET & DURATION OF INITIAL SYMPTOMS & DISPOSITION
30 to 70 [R]	From 6-12 hours: none to slight incidence of transient Roentgen headache and nausea; vomiting in up to 5 percent of personnel in upper part of dose range. Mild lymphocyte depression within 24 hours. Full recovery expected. (Fetus damage possible from 50R and above.)
70 to 150 [R]	From 2-20 hours: transient mild nausea and vomiting in 5 to 30 percent of personnel. Potential for delayed traumatic and surgical wound healing, minimal clinical effect. Moderate drop in lymphocyte, platelet, and granulocyte counts. Increased susceptibility to opportunistic pathogens. Full recovery expected.
150 to 300 [R]	From 2 hours to three days: transient to moderate nausea and vomiting in 20 to 70 percent; mild to moderate fatigability and weakness in 25 to 60 percent of personnel. At 3 to 5 weeks: medical care required for 10 to 50%. At high end of range, death may occur to maximum 10%. Anticipated medical problems include infection, bleeding, and fever. Wounding or burns will geometrically increase morbidity and mortality.
300 to 530 [R]	From 2 hours to three days: transient to moderate nausea and vomiting in 50 to 90 percent; mild to moderate fatigability in 50 to 90 percent of personnel. At 2 to 5 weeks: medical care required for 10 to 80%. At low end of range, less than 10% deaths; at high end, death may occur for more than 50%. Anticipated medical problems include frequent diarrheal stools, anorexia, increased fluid loss, ulceration. Increased infection susceptibility during immunocompromised time-frame. Moderate to severe loss of lymphocytes. Hair loss after 14 days.
530 to 830 [R]	From 2 hours to two days: moderate to severe nausea and vomiting in 80 to 100 percent of personnel; From 2 hours to six weeks: moderate to severe fatigability and weakness in 90 to 100 percent of personnel. At 10 days to 5 weeks: medical care required for 50 to 100%. At low end of range, death may occur for more than 50% at six weeks. At high end, death may occur for 99% of personnel. Anticipated medical problems include developing pathogenic and opportunistic infections, bleeding, fever, loss of appetite, GI ulcerations, bloody diarrhea, severe fluid and electrolyte shifts, capillary leak, hypotension. Combined with any significant physical trauma, survival rates will approach zero.
830 [R] Plus	From 30 minutes to 2 days: severe nausea, vomiting, fatigability, weakness, dizziness, and disorientation; moderate to severe fluid imbalance and headache. Bone marrow total depletion within days. CNS symptoms are predominant at higher radiation levels. Few, if any, survivors even with aggressive and immediate medical attention.

IMPORTANT:

PEN200MRB, Radiation Pen Dosimeter, 0 to 200 Milliroentgen [mR] Scale, (Grey in color)

CD V-742, Radiation Pen Dosimeter, 0 to 200 Roentgen [R] Scale, (Yellow in color)